

Appl. No. 10/090,377  
Atty. Docket No. G-290 (CP-1241)  
Amdt. Dated November 18, 2004  
Reply to Office Action of February 20, 2004  
Customer No. 27752

### REMARKS

#### Application Amendments

Claims 1-18 are pending in the present application. No claim amendments have been made.

#### Rejections Under 35 USC 103(a) Over US Patent No. 5,061,289 to Clausen et al. in view of US Patent No. 4,900,325 to Rose et al.

Claims 1-18 are rejected under 35 USC 103(a) as being unpatentable over US Patent No. 5,061,289 to Clausen et al. ("Clausen") in view of US Patent No. 4,900,325 to Rose et al. ("Rose"). The Examiner asserts that Clausen teaches a hair dyeing composition comprising a diaminopyrazol developer substance of a formula (I), which is similar to Applicants' claimed formula (5), when in the formula (I) of Clausen  $R^1$  to  $R^4$  all are hydrogen and when in Applicants' claimed formula (5)  $R^6$ ,  $R^7$ , and  $R^8$  are hydrogen. But, the Examiner notes that Clausen does not teach or disclose the species of 2-(4,5-diaminopyrazol-1-yl)-ethanol. The Examiner also notes that Applicants' claims differ from Clausen by reciting a dyeing composition comprising at least one coupler of a claimed formula (1) in which R is a moiety selected from the claimed formulas (2), (3), or (4). However, the Examiner asserts that Clausen suggests a hair dyeing composition comprising couplers of the genus of m-phenylenediamine compounds.

Additionally, the Examiner asserts that Rose teaches a hair dyeing composition comprising a N-phenylbenzene-1,3-diamine coupler of a formula (I), which is similar to Applicants' claimed formula (1) when in formula (I) of Rose  $R^1$  to  $R^4$  all are hydrogen and when in Applicant's formula (1) R is selected from the formula (2) in which  $R^1$  to  $R^5$  all are hydrogen. Thus, the Examiner concludes that one of ordinary skill in the art would be motivated to modify the composition of Clausen by incorporating the N-phenylbenzene-1,3-diamine coupler of Rose because Clausen allegedly suggests the use of couplers of the genus of m-phenylenediamine compounds and Rose teaches the species of N-phenylbenzene-1,3-diamine, and because one of ordinary skill in the art would expect any species of a genus to have similar properties and, thus, the same use as the

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genus as a whole. Applicants respectfully traverse the present rejection based on the following comments.

- A. A *prima facie* case of obviousness has not been established because there is no suggestion or motivation to modify and combine the cited references.

The combination of Clausen and Rose does not establish a *prima facie* case of obviousness because there is no suggestion or motivation to modify and combine the cited references to achieve Applicants' hair dyeing composition. Modifying the hair dyeing composition of Clausen by substituting the N-phenylbenzene-1,3-diamine coupler of Rose for the m-phenylenediamine coupler disclosed in Clausen would be, at best, to employ an improper "Obvious to Try" rationale. See MPEP 2145. Among what can be characterized as "Obvious to Try" is "to vary all parameters or try each of numerous possible choices until one possibly arrived at a successful result, where the prior art gave either no indication of which parameters were critical or no direction as to which of many possible choices is likely to be successful." *In re Patrick*, 852 F.2d 894, 903 (Fed. Cir. 1988).

Applicants' claimed hair dyeing product comprises a hair dyeing composition which requires one or more N-aryl-m-phenylenediamine couplers of the claimed formula (1) in combination with one or more diaminopyrazole primary intermediates of the claimed formula (5). This combination of claimed couplers and claimed primary intermediates in Applicants' hair dyeing compositions gives purple chromophores. Applicants' hair dyeing compositions provide coloration which achieves good dye uptake by the hair and which possesses good wash fastness and good resistance to acid perspiration with respect to the purple color provided.

In contrast, Clausen discloses diaminopyrazole based compounds as suitable developer (*i.e.*, primary intermediate) compounds for hair dye formulations which can be used to dye hair in brilliant red color shades. See column 1, lines 55-62 of Clausen. The use of a developer compound in an oxidative hair dye composition requires the presence of a suitable coupler compound to achieve the desired color. Although Clausen discloses a number of conventional coupler materials, including the known coupler substance m-phenylenediamine, as suitable for use in combination with the Clausen's diaminopyrazole

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developers, Clausen fails to teach or suggest the use of *N*-aryl substituted *m*-phenylenediamine compounds. Further, and contrary to the Examiner's assertions, Clausen's disclosure at column 2, line 36 of the known coupler substance *m*-phenylenediamine as a suitable coupler is not a teaching of the entire genus of *m*-phenylenediamine compounds. However, even if Clausen does teach the entire genus of *m*-phenylenediamine compounds as the Examiner asserts, it is a teaching of an infinite number of species because Clausen nowhere provides a teaching or suggestion of suitable *m*-phenylenediamine substituents. Thus, without any motivation to select specifically *N*-aryl substituted *m*-phenylenediamine couplers to combine with diaminopyrazole based developers, *N*-aryl substituted *m*-phenylenediamine compounds are just "Obvious to Try" to one of ordinary skill in the art in view of the disclosure of Clausen.

Nor does Rose provide any motivation to select *N*-aryl substituted *m*-phenylenediamine couplers to combine with diaminopyrazole based developers. Although Rose discloses hair dyeing compositions which contain substituted aminodiphenylamine couplers, Rose further teaches that such substituted aminodiphenylamine couplers are particularly suitable for use with developers in the class of tetraaminopyrimidine compounds. Rose does disclose additional suitable developers, however, Rose fails to teach or suggest any pyrazole based developers, such as those as described in Clausen. Thus, Rose provides no motivation to select *N*-aryl substituted *m*-phenylenediamine couplers to combine with diaminopyrazole based developers.

Given the well established unpredictability of the art in combining couplers and developers, and the array of possible combinations set forth in the art as a whole, there is no reasonable expectation of success in combining Clausen and Rose without some specific teaching of the combination of diaminopyrazole based developers and *N*-aryl substituted *m*-phenylenediamine couplers. Accordingly, Applicants claims 1-18 are novel and nonobvious over the combination of Clausen and Rose.

B. Even if a *prima facie* case of obviousness has been established, Applicants have overcome the presumption by a showing of superior and unexpected results.

Alternatively, even if a *prima facie* case has been established, Applicants have overcome the presumption of obviousness by a showing of superior and unexpected

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results for Applicants' claimed hair dyeing composition versus hair dyeing compositions comprising couplers which are structurally similar to Applicants' claimed couplers. See *In re Wiechert*, 370 F.2d 927 (Cust. & Pat. App. 1967); see also MPEP 2144.09. Although arguments of counsel cannot take the place of factually supported objective evidence, rebuttal evidence can be presented in the specification. See *In re Soni*, 54 F.3d 746, 750 (Fed. Cir. 1995). "Consistent with the rule that all evidence of nonobviousness must be considered when assessing patentability, the PTO must consider comparative data in the specification in determining whether the claimed invention provides unexpected results." *In re Soni*, 54 F.3d at 750.

Specifically, in Dyeing Example 2 beginning at page 22 of the specification, Applicants have demonstrated superior and unexpected results with respect to color fastness to the effect of acid perspiration for Composition A, which comprises N-(2-hydroxyethyl)-4,5-diaminopyrazole sulfate as the developer (*i.e.*, primary intermediate) and N-phenyl-benzene-1,3, diamine as the coupler. Composition A, which is representative of Applicants' hair dyeing composition, is contrasted with Composition B, which comprises N-(2-hydroxyethyl)-4,5-diaminopyrazole sulfate as the developer (constant with respect to Composition A) and N-methyl-benzene-1,3-diamine as the coupler (varied with respect to Composition A). Composition A is also contrasted with Composition C, which comprises N-(2-hydroxyethyl)-4,5-diaminopyrazole sulfate as the developer (constant with respect to Composition A) and benzene-1,3-diamine as the developer (varied with respect to Composition A).

Composition A produces a purple shade on Piedmont hair, whereas Compositions B and C, respectively, produce a dark red shade and a red shade on Piedmont hair. Additionally, Table 3 on page 23 of the specification shows that Composition A exhibits at least about four times better color fastness than Compositions B and C. After thirty-six hours of acid perspiration testing, the total color difference ( $\Delta E$ ) as measured by a spectrophotometer of hair dyed with Composition A, which contains the coupler N-phenyl-benzene-1,3, diamine (*i.e.*, a N-aryl substituted m-phenyldiamine coupler of the present invention) is only 5.76. In contrast, the  $\Delta E$  for hair dyed with Composition B, which contains the coupler N-methyl-benzene-1,3-diamine (*i.e.*, a N-alkyl substituted m-phenyldiamine coupler) is 25.87. Similarly, the  $\Delta E$  for hair dyed with Composition C, which contains the coupler benzene-1,3-diamine (*i.e.*, the extremely common coupler,

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*unsubstituted* m-phenylenediamine) is 22.93. Thus, Applicants have demonstrated that Composition A exhibits about 4.49 times better color fastness than Composition B and about 3.98 times better color fastness than Composition C.

Applicants respectfully submit that at least an almost four-fold improvement of color fastness performance over structurally similar compounds is sufficient to rebut a *prima facie* case of obviousness. Therefore, Applicants' claims 1-18 are novel and nonobvious over the combination of Clausen and Rose.

#### CONCLUSION

In light of the remarks presented herein, it is requested that the Examiner reconsider and withdraw the present rejections. Early and favorable action in the case is respectfully requested.

Applicant has made an earnest effort to place their application in proper form and to distinguish the invention as now claimed from the applied references. In view of the foregoing, Applicant respectfully requests reconsideration of this application and allowance of Claims 1-18.

Respectfully submitted,  
Mu'Il Lim et al.

By M. Dressman  
Marianne Dressman  
Attorney for Applicant(s)  
Registration No. 42,498  
(513) 626-0673

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